Ethnobotanical communication

Ethnobotanical study on some Malaysian anti-malarial plants: A community based survey

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ABSTRACT

Ethnopharmacological relevance: Various plant species are used in the traditional medicine for the treatment of malaria. This is the first community based ethnobotanical study in Peninsular Malaysia.

Aim of the study: To investigate the plants traditionally used in the treatment of malaria in Malaysia.

Materials and methods: An ethnobotanical survey was carried out among 233 Aboriginal and rural households, and traditional healers in malaria endemic areas in Peninsular Malaysia. Data were collected using a pre-tested questionnaire.

Results: Nineteen species belonging to 17 families were identified. Twelve plant species have not previously been documented for the treatment of malaria in Malaysia.

Conclusions: Findings of this study can be used as an ethnopharmacological basis for selecting plants for further anti-malarial phytochemical and pharmaceutical studies.

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1. Introduction

Evidence of artemisinin-resistant malaria has been reported on the Thai-Cambodian border and there is a global call to look for new anti-malarial agents from medicinal plants, which represent the main ingredients of modern anti-malarial agents (Htut, 2009). The new drugs must exhibit efficacy and safety, be inexpensive and have additional properties important for the specific disease indication (Rosenthal, 2003). Consistent with this specification, traditional medicinal plants have several potential advantages; they are affordable, easily accessible and there is no evidence of resistance to whole-plant extracts. Moreover, traditional medicinal plants have been used to treat malaria for thousands of years and they are the ingredients of the two main groups of modern anti-malarial drugs; artemisinin and quinine derivatives (Willcox and Bodeker, 2004; Batista et al., 2009).

Although many communities have achieved successful ethnobotanical approaches in this field, very little is known about which plant remedies are still used in the traditional treatment of malaria in Peninsular Malaysia. Hence, the present study was carried out to establish a preliminary ethnobotanical database for the plants traditionally used to treat malaria among Aboriginal and rural communities, and traditional healers in malaria endemic areas in Pahang, Malaysia.

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2. Materials and methods

2.1. Study area

Two different malaria endemic communities in the district of Lipis in Pahang state were involved in this survey: the hill/forest Pos Betau area inhabited by the Aboriginal peoples, and the Padang Tengku and Benta areas inhabited by the rural population. The climate is equatorial with an average temperature of 23–32 °C and an annual rainfall of between 1525 and 3050 mm. The key components of malaria control are indoor spraying of insecticide, and early diagnosis and treatment supplements performed by the Vector-Borne Diseases Control Unit in Kuala Lipis, the capital city of Lipis district.

2.2. Data collection

A cross-sectional ethnobotanical survey was carried out from October 2008 to May 2009. Three different groups of respondents were interviewed at the study area; Aboriginal households (house-to-house interviews, n = 100), rural household (interviews at outpatient clinics, n = 123), and traditional healers (n = 10). Information on plant preparation, application and the parts used to treat malaria was obtained from the head of each household using a pre-tested, semi-structured questionnaire.

Vouchers of the plants were collected and identified by a plant taxonomist and deposited at the Herbarium of the University of Malaya, Kuala Lumpur, Malaysia. The florais used for identification were Malay wild flowers and Garden Plants in Singapore (Henderson, 1954; Boo et al., 2006). Prior to study